INDEX TO AUTHORS

A

ADESNIK, MILTON. See LANDE, ADESNIK, SUMIDA, TASHIRO, and SABATINI, 513

ALLEN, D. J. See REIMERS, ALLEN, FEUERSTEIN, and MUSTARD, 359

ALLISON, VENITA F. See KELLEMS, ALLISON, and BUTOW, 1

ARMSTRONG, PETER B., and LACKIE, JOHN M. Studies on intercellular invasion in vitro using rabbit peritoneal neutrophil granulocytes (PMN's). I. Role of contact inhibition of locomotion, 439

B

BAILEY, GORDON B. See KUSAMRARN, SOBHON, and BAILEY, 529

—. See KUSAMRARN, VINIJCHAIKUL, and BAILEY, 540

BENCHIMOL, SARITA. See CANTIN and BENCHIMOL, 463

BERRY, SPENCER J., and JOHNSON, ELIZABETH. Formation of temporary flagellar structures during insect organogenesis, 489

BEZARD, JEAN. See CARLIER and BEZARD, 383

BORNSTEIN, PAUL. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75

BREUER, ANTHONY C., CHRISTIAN, CLIFFORD N., HENKART, MARYANNA, and NELSON, PHILLIP G. Computer analysis of organelle translocation in primary neuronal cultures and continuous cell lines, 562

BURTON, P. R., HINKLEY, R. E., and PIERSON, G. B. Tannic acid-stained microtubules with 12, 13, and 15 protofilaments, 227

BUTOW, RONALD A. See KELLEMS, ALLISON, and BUTOW, 1

C

CANTIN, MARC, and BENCHIMOL, SARITA. Localization and characterization of carbohydrates in adrenal medullary cells, 463

CARLIER, HELENE, and BEZARD, JEAN. Electron microscope autoradiographic study of intestinal absorption of decanoic and octanoic acids in the rat, 383

CHANG, K. P. See TUAN and CHANG, 309

CHRISTIAN, CLIFFORD N. See BREUER, CHRISTIAN, HENKART, and NELSON, 562

CLEMENTE, FRANÇOIS, and MELDOLESI, JACOPO. Calcium and pancreatic secretion. I. Subcellular distribution of calcium and magnesium in the exocrine pancreas of the guinea pig, 88

CONRAD, GARY W. See SPOONER and CONRAD, 286

COPPE, M. R. See ROMRELL, COPPE, MUNRO, and ITO, 428

CROOP, J., and HOLTZER, H. Response of myogenic and fibrogenic cells to cytochalasin B and to Colcemid. I. Light microscope observations, 271

D

DEHM, PETER. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75

DENTLER, WILLIAM L., GRANETT, SANDRA, and ROSENBAUM, JOEL L. Ultrastructural localization of the high molecular weight proteins associated with in vitro-assembled brain microtubules, 237

DE PETRIS, S. Concanavalin A receptors, immunoglobulins, and θ antigen of the lymphocyte surface. Interactions with concanavalin A and with cytoplasmic structures, 123

DEVREOTES, PETER N., and FAMBROUGH, DOUGLAS M. Acetylcholine receptor turnover in membranes of developing muscle fibers, 335

E

ELIAS, PETER M., and FRIEND, DANIEL S. The permeability barrier in mammalian epidermis, 180

ELLIS, G. W. See SALMON and ELLIS, 587

EVANS, WARREN H. See NOSEWORTHY, SMITH, HIMMELHOCH, and EVANS, 577

F

FAMBROUGH, DOUGLAS M. See DEVREOTES and FAMBROUGH, 335

FEUERSTEIN, I. A. See REIMERS, ALLEN, FEUERSTEIN, and MUSTARD, 359

FITZPATRICK, THOMAS B. See JIMBOW and FITZPATRICK, 481

FRANKE, WERNER W. See SCHEER, TRENDELENBURG, and FRANKE, 163

FREEMAN, K. B. See WALLACE and FREEMAN, 492

FRIEND, DANIEL S. See ELIAS and FRIEND, 180

G

GIBBONS, I. R. See LINDEMANN and GIBBONS, 147

GILULA, NORTON B. See RAVIOLA and GILULA, 192

GLASS, JONATHAN, LAVIDOR, LINDA M., and ROBINSON, STEPHEN H. Studies of murine erythroid cell development. Synthesis of heme and hemoglobin, 298

GOLDSTEIN, LESTER. See MARUTA and GOLDSTEIN, 631

GOULD, ROY R. The basal bodies of *Chlamydomonas reinhardtii*. Formation from probasal bodies, isolation, and partial characterization, 65
GRANETT, SANDRA. See DENTLER, GRANETT, and ROSENBAUM, 237
GRANICK, DONNA. Nucleolar necklaces in chick embryo fibroblast cells. I. Formation of necklaces by dichlororibobenzimidazole and other adenosine analogues that decrease RNA synthesis and degrade preribosomes, 398
—. II. Microscope observations of the effect of adenosine analogues on nucleolar necklace formation, 418
GREEN, S. M. See LAWRENCE and GREEN, 373

H

HACKENBROCK, CHARLES R., and MILLER, KATY JO. The distribution of anionic sites on the surfaces of mitochondrial membranes. Visual probing with polycationic ferritin, 615
HANAS, JAY, LINDEN, G., and STUART, K. Mitochondrial and cytoplasmic ribosomes and their activity in blood and culture form *Trypanosoma brucei*, 103
HAY, ELIZABETH D. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75
HENKART, MARYANNA. See BREUER, CHRISTIAN, HENKART, and NELSON, 562
HEPLER, PETER K. See PALEVITZ and HEPLER, 29
HIMMELHOCH, S. RALPH. See NOSEWORTHY, SMITH, HIMMELHOCH, and EVANS, 577
HINKLEY, R. E. See BURTON, HINKLEY, and PIERSON, 227
HOLTZER, H. See CROOP and HOLTZER, 271

I

ITO, S. See ROMRELL, COPPE, MUNRO, and ITO, 428

J

JARETT, LEONARD. See LEMAY and JARETT, 39
JIMBOW, KOWICHI, and FITZPATRICK, THOMAS B. Changes in distribution pattern of cytoplasmic filaments in human melanocytes during ultraviolet-mediated melanin pigmentation. The role of the 100-Å filaments in the elongation of melanocytic dendrites and in the movement and transfer of melanosomes, 481
JOHNSON, ELIZABETH. See BERRY and JOHNSON, 489

K

KARNOVSKY, MORRIS J., and RYAN, GRAEME, B. Substructure of the glomerular slit diaphragm in freeze-fractured normal rat kidney, 233
KELLEMS, ROD E., ALLISON, VENITA F., and BUTOW, RONALD A. Cytoplasmic type 80S ribosomes associated with yeast mitochondria. IV. Attachment of ribosomes to the outer membrane of isolated mitochondria, 1
KIERSZENBAUM, A. L., and TRES, LAURA L. Structural and transcriptional features of the mouse spermatid genome, 258
KUSAMRARN, THANIT, SOBHON, PRASERT, and BAILEY, GORDON B. The mechanism of formation of inhibitor-induced ribosome helices in *Entamoeba invadens*, 529
—, VINIJCHAIKUL, KAMOLWAT, and BAILEY, GORDON B. Comparison of the structure and function of polysomal and helical ribosomes from *Entamoeba invadens*, 540

L

LACKIE, JOHN M. See ARMSTRONG and LACKIE, 439
LANDE, MAURICIO A., ADESNIK, MILTON, SUMIDA, MASAHIRO, TASHIRO, YUTAKA, and SABATINI, DAVID D. Direct association of messenger RNA with microsomal membranes in human diploid fibroblasts, 513
LAVIDOR, LINDA M. See GLASS, LAVIDOR, and ROBINSON, 298
LAWRENCE, P. A., and GREEN, S. M. The anatomy of a compartment border. The intersegmental boundary in *Oncopeltus*, 373
LAZARIDES, ELIAS. Tropomyosin antibody: the specific localization of tropomyosin in nonmuscle cells, 549
LEMAY, ANDRE, and JARETT, LEONARD. Pitfalls in the use of lead nitrate for the histochemical demonstration of adenylate cyclase activity, 39
LEUENBERGER, PETER M., and NOVIKOFF, ALEX B. Studies on microperoxisomes. VII. Pigment epithelial cells and other cell types in the retina of rodents, 324
LINDEMANN, CHARLES B., and GIBBONS, I. R. Adenosine triphosphate-induced motility and sliding of filaments in mammalian sperm extracted with Triton X-100, 147
LINDEN, G. see HANAS, LINDEN, and STUART, 103
LODISH, HARVEY F., and SMALL, BARBARA. Membrane proteins synthesized by rabbit reticulocytes, 51

M

MARUTA, HIROSHI, and GOLDSTEIN, LESTER. The fate and origin of the nuclear envelope during and after mitosis in *Amoeba proteus*. I. Synthesis and behavior of phospholipids of the nuclear envelope during the cell life cycle, 631
MELDOLESI, JACOPO. See CLEMENTE and MELDOLESI, 88
MILLER, KATY JO. See HACKENBROCK and MILLER, 615
MUNRO, D. R. See ROMRELL, COPPE, MUNRO, and ITO, 428
MUSTARD, J. F. See REIMERS, ALLEN, FEUERSTEIN, and MUSTARD, 359

N

NANNEY, D. L. Patterns of basal body addition in ciliary rows in *Tetrahymena*, 503
NELSON, PHILLIP G. See BREUER, CHRISTIAN, HENKART, and NELSON, 562
NIST, CYNTHIA, VON DER MARK, KLAUS, HAY, ELIZABETH D., OLSEN, BJORN R., BORNSTEIN, PAUL, ROSS, RUSSELL, and DEHM, PETER. Location of

procollagen in chick corneal and tendon fibroblasts with ferritin-conjugated antibodies, 75
NOSEWORTHY, JOHN, SMITH, GILBERT, H., HIMMELHOCH, S. RALPH, and EVANS, WARREN H. Protein and glycoprotein electrophoretic patterns of enriched fractions of primary and secondary granules from guinea pig polymorphonuclear leukocy es, 577
NOVIKOFF, ALEX B. See LEUENBERGER and NOVIKOFF, 324

O

OLSEN, BJORN R. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75
ORCI, L. See SCHOFIELD and ORCI, 223

P

PALEVITZ, BARRY A., and HEPLER, PETER K. Identification of actin *in situ* at the ectoplasm-endoplasm interface of *Nitella*. Microfilament-chloroplast association, 29
PFENNINGER, KARL H., and RINDERER, ERIC R. Methods for the freeze-fracturing of nerve tissue cultures and cell monolayers, 15
PIERSON, G. B. See BURTON, HINKLEY, and PIERSON, 227

R

RAHMAN, YUEH-ERH, and WRIGHT, BETTY JEAN. Liposomes containing chelating agents. Cellular penetration and a possible mechanism of metal removal, 112
RAVIOLA, ELIO, and GILULA, NORTON B. Intramembrane organization of specialized contacts in the outer plexiform layer of the retina. A freeze-fracture study in monkeys and rabbits, 192
REIMERS, H. J., ALLEN, D. J., FEUERSTEIN, I. A., and MUSTARD, J. F. Transport and storage of serotonin by thrombin-treated platelets, 359
RINDERER, ERIC R. See PFENNINGER and RINDERER, 15
ROBINSON, STEPHEN H. See GLASS, LAVIDOR, and ROBINSON, 298
ROMRELL, L. J., COPPE, M. R., MUNRO, D. R., and ITO, S. Isolation and separation of highly enriched fractions of viable mouse gastric parietal cells by velocity sedimentation, 428
ROSENBAUM, JOEL L. See DENTLER, GRANETT, and ROSENBAUM, 237
ROSS, RUSSELL. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75
RUTISHAUSER, URS, and SACHS, LEO. Cell-to-cell binding induced by different lectins, 247
RYAN, GRAEME B. See KARNOVSKY and RYAN, 233

S

SABATINI, DAVID D. See LANDE, ADESNIK, SUMIDA, TASHIRO, and SABATINI, 513
SACHS, LEO. See RUTISHAUSER and SACHS, 247
SALMON, E. D., and ELLIS, G. W. A new miniature hydrostatic pressure chamber for microscopy. Strain-free optical glass windows facilitate phase-contrast and polarized-light microscopy of living cells. Optional fixture permits simultaneous control of pressure and temperature, 587
—. Pressure-induced depolymerization of spindle microtubules. I. Changes in birefringence and spindle length, 603
SCHEER, ULRICH, TRENDELENBURG, MICHAEL F., and FRANKE, WERNER W. Effects of actinomycin D on the association of newly formed ribonucleoproteins with the cistrons of ribosomal RNA in *Triturus* oocytes, 163
SCHOFIELD, J. G., and ORCI, L. Release of growth hormone from ox pituitary slices after pronase treatment, 223
SMALL, BARBARA. See LODISH and SMALL, 51
SMITH, GILBERT, H. See NOSEWORTHY, SMITH, HIMMELHOCH, and EVANS, 577
SOBHON, PRASERT. See KUSAMRARN, SOBHON, and BAILEY, 529
SPOONER, BRIAN S., and CONRAD, GARY W. The role of extracellular materials in cell movement. I. Inhibition of mucopolysaccharide synthesis does not stop ruffling membrane activity or cell movement, 286
STUART, K. See HANAS, LINDEN, and STUART, 103
SUMIDA, MASAHIRO. See LANDE, ADESNIK, SUMIDA, TASHIRO, and SABATINI, 513

T

TASHIRO, YUTAKA. See LANDE, ADESNIK, SUMIDA, TASHIRO, and SABATINI, 513
TRENDELENBURG, MICHAEL F. See SCHEER, TRENDELENBURG, and FRANKE, 163
TRES, LAURA L. See KIERSZENBAUM and TRES, 258
TUAN, R. S., and CHANG, K. P. Isolation of intracellular symbiotes by immune lysis of flagellate protozoa and characterization of their DNA, 309

V

VINIJCHAIKUL, KAMOLWAT. See KUSAMRARN, VINIJCHAIKUL, and BAILEY, 540
VON DER MARK, KLAUS. See NIST, VON DER MARK, HAY, OLSEN, BORNSTEIN, ROSS, and DEHM, 75

W

WALLACE, R. B., and FREEMAN, K. B. Selection of mammalian cells resistant to a chloramphenicol analog, 492
WRIGHT, BETTY JEAN. See RAHMAN and WRIGHT, 112

INDEX TO SUBJECTS

A

Absorption, decanoic and octanoic acids, rat intestine, biochemical and autoradiographic EM study, 383

Acetylcholine receptor turnover, surface membrane, chick embryo muscle, biochemical study, 335

Actin, identification at ectoplasm-endoplasm interface, microfilament-chloroplast association, *Nitella*, Nomarski and EM study, 29

Actinomycin D, effects on association of ribosomal RNA to deoxyribonucleoprotein, *Triturus* oocytes, biochemical and autoradiographic light and EM study, 163

Adenosine analogues, formation of nucleolar necklaces, chick embryo fibroblasts, biochemical study, 398

— analogues, formation of nucleolar necklaces, chick embryo fibroblasts, light microscope study, 418

— triphosphate, effect on motility and sliding of filaments, mammalian sperm extracted with Triton, light and EM study, 147

Adenylate cyclase, artifacts in lead nitrate method of determination, biochemical and histochemical EM study, 39

Adrenal gland, rat and hamster, carbohydrates of medullary cells, cytochemical light and EM study, 463

Alga *Chlamydomonas reinhardtii*, basal bodies, formation from probasal bodies, isolation, and partial characterization, biochemical and EM study, 65

— *Nitella flexilis*, microfilament-chloroplast association, actin at ectoplasm-endoplasm interface, Nomarski and EM study, 29

Anionic sites, membrane surface of rat liver mitochondria, use of polycationic ferritin, biochemical and cytochemical EM study, 615

Annelid *Chaetopterus pergamentaceous*, oocyte, pressure-induced depolymerization of spindle microtubules, changes in birefringence and length, light microscope study, 603

Annuli, formation of basal bodies from, *Chlamydomonas reinhardtii*, biochemical and EM study, 65

Antibody, ferritin-conjugated, location of procollagen, chick corneal and tendon fibroblasts, immunocytochemical EM study, 75

— localization of tropomyosin, nonmuscle cells, biochemical and immunofluorescence study, 549

Antigen θ, immunoglobulins, and concanavalin A receptors, mouse lymphocyte surface, immunofluorescence and EM study, 123

Arborization, myogenic and fibrogenic cells, effect of cytochalasin B and Colcemid, light microscope study, 271

B

Basal bodies, *Chlamydomonas reinhardtii*, formation from probasal bodies, isolation and partial characterization, biochemical and EM study, 65

— body addition, ciliary rows, *Tetrahymena*, EM study 503

Binding, cell-to-cell, induction by lectins, biochemical and cytological study, 247

Blood, rabbit, transport and storage of serotonin by thrombin-treated platelets, biochemical and E[illegible] study, 3[illegible]

Brain, chick, microtubules, localization of high molecular weight proteins, biochemical and EM study, 237

Bull, sperm, Triton-extracted, effect of adenosine triphosphate on sliding and motility of filaments, light and EM study, 147

C

Calcium and magnesium, subcellular distribution in guinea pig exocrine pancreas, biochemical and EM study, 88

Carbohydrates, adrenal medullary cells, rat and hamster, cytochemical light and EM study, 463

Cell cycle, *Amoeba proteus*, nuclear envelope phospholipid synthesis and behavior, autoradiographic and biochemical and cytological study, 631

Cells, acinar, guinea pig pancreas, subcellular distribution of calcium and magnesium, biochemical and EM study, 88

—, chick corneal and tendon fibroblasts, location of procollagen using ferritin-conjugated antibodies, immunocytochemical EM study, 75

—, chick embryo fibroblasts, nucleolar necklaces, effect of adenosine analogues, light microscope study, 418

—, chick embryo fibroblasts, nucleolar necklaces, formation by dichlororibobenzimidazole and other adenosine monologues, biochemical study, 398

—, chick embryo heart fibroblasts, role of mucopolysaccharide synthesis in ruffling membrane activity and cell locomotion, biochemical and phase-contrast microscope study, 286

—, chick embryo skeletal muscle, surface membrane, acetylcholine receptor turnover, biochemical study, 335

—, chick embryo spinal cord and dorsal root ganglion, rat brain, neuroblastoma, L cells, HeLa and mouse

fibroblasts, computer analysis of organelle translocation, Nomarski and EM study, 562
Cells, gastric parietal, isolation from mouse stomach, biochemical and light and EM study, 428
—, human skin fibroblasts CRL1139, antibody localization of tropomyosin, biochemical and immunofluorescence study, 549
—, living, phase-contrast and light microscopy, hydrostatic pressure chamber, strain-free optical glass windows, 587
—, LMTK⁻ line, resistance to chloramphenicol analogue, biochemical and cytological study, 492
—, medullary, rat and hamster adrenal gland, carbohydrate localization, cytochemical light and EM study, 463
—, murine erythroid, heme and hemoglobin synthesis, effect of erythropoietin, biochemical and cytological study, 298
—, myogenic and fibrogenic, response to cytochalasin B and Colcemid, light microscope study, 271
—, pigment epithelial, pigmented and albino rodent retina, presence of microperoxisomes, cytochemical EM study, 324
—, rat spinal cord, nerve growth cones, and cell monolayers, methods for freeze-fracturing, EM study, 15
—, WI-38 fibroblasts, direct association of messenger RNA with microsomal membranes, biochemical study, 513
—, YAC lymphoma, myeloid leukemia, and normal fibroblasts, cell-to-cell binding induced by lectins, biochemical and cytological study, 247
Cell-to-cell binding, induction by lectins, biochemical and cytological study, 247
Chelating agents, mouse liver liposomes, cellular penetration and mechanism of metal removal, EM study, 112
Chick, brain, microtubules, localization of high molecular weight proteins, biochemical and EM study, 237
Chloramphenicol analogue, tevenel, mammalian cell line resistant to, biochemical and cytological study, 492
Chloroplasts, *Nitella*, association with microfilaments, actin at ectoplasm-endoplasm interface, Nomarski and EM study, 29
Ciliary rows, *Tetrahymena*, patterns of basal body addition, EM study, 503
Colcemid, effect on myogenic and fibrogenic cells, light microscope study, 271
Compartment border, *Oncopeltus*, intersegmental boundary, light and EM study, 373
Computer analysis, organelle translocation, primary neuronal cultures and continuous cell lines, Nomarski and EM study, 562
Concanavalin A and lectins, induction of cell-to-cell binding, biochemical and cytological study, 247
— A receptors, immunoglobulins, and θ antigen, mouse lymphocyte surface, immunofluorescence and EM study, 123
Contact inhibition of locomotion, intercellular invasion, rabbit peritoneal neutrophil granulocytes, microcinematographic and light and EM study, 439
Cytochalasin B, effect on cytoplasmic filaments during pigmentation, human melanocytes, light and EM study, 481
— B, effect on myogenic and fibrogenic cells, light microscope study, 271
Cytoplasm, ribosomes, blood and culture form *Trypanosoma brucei*, biochemical study, 103
—, ribosomes, yeast mitochondria, attachment to outer membrane, biochemical and EM study, 1

D

Deoxyribonucleic acid, symbiotes isolated by immune lysis of flagellate protozoa, biochemical and light and EM study, 309
Deoxyribonucleoprotein, association with ribosomal RNA, effects of actinomycin D, *Triturus* oocytes, biochemical and autoradiographic light and EM study, 163
Desmosome, attachment, intersegmental boundary, *Oncopeltus*, light and EM study, 373
Dichlororibobenzimidazole, formation of nucleolar necklaces, chick embryo fibroblasts, biochemical study, 398

E

Ectoplasm-endoplasm interface, *Nitella*, identification of actin, microfilament-chloroplast association, Nomarski and EM study, 29
Envelope, nuclear, *Amoeba proteus*, phospholipid synthesis and behavior during cell cycle, autoradiographic and biochemical and cytological study, 631
Enzyme, adenylate cyclase, artifacts in lead nitrate method of determination, biochemical and histochemical EM study, 39
—, uroporphyrinogen I synthetase, intracellular symbiotes isolated by immune lysis of flagellate protozoa, biochemical and light and EM study, 309
Epidermis, mouse skin, permeability barrier, tracer and freeze-fracture EM study, 180
Erythropoietin, effect on heme and hemoglobin synthesis, murine erythroid cells, biochemical and cytological study, 298

F

Fatty acids, decanoic and octanoic, intestinal absorption, biochemical and autoradiographic EM study, 383
Ferritin, polycationic, anionic sites on rat liver mitochondrial membranes, biochemical and cytochemical EM study, 615
Ferritin-conjugate antibodies, location of procollagen, chick corneal and tendon fibroblasts, immunocytochemical EM study, 75
Filaments, cytoplasmic, human melanocytes, role in melanin pigmentation, effect of cytochalasin B and vincristine, light and EM study, 481
—, mammalian sperm extracted with Triton, effect

of adenosine triphosphate on motility and sliding of, light and EM study, 147
Filaments, proto-, 12, 13, and 15, tannic acid-stained microtubules, EM study, 227
Fixation, tannic acid-staining, microtubules with 12, 13, and 15 protofilaments, EM study, 227
Flagella, temporary, formation during insect organogenesis, EM study, 489

G

Glass windows, strain-free, hydrostatic pressure chamber for phase-contrast and light microscopy, 587
Glomerulus, rat kidney, substructure of slit diaphragm, freeze-fracture EM study, 233
Glycoprotein and protein, primary and secondary granules of guinea pig polymorphonuclear leukocytes, biochemical and light and EM study, 577
—, primary and secondary, guinea pig polymorphonuclear leukocytes, protein and glycoprotein, biochemical and light and EM study, 577
Granulocytes, peritoneal neutrophil, rabbit, intercellular invasion, role of contact inhibition of locomotion, time-lapse microcinematographic and light and EM study, 439
Growth hormone release, ox pituitary, effect of pronase, immunological and EM study, 223
Guinea pig, pancreas, subcellular distribution of calcium and magnesium in acinar cells, biochemical and EM study, 88
— pig, polymorphonuclear leukocytes, protein and glycoprotein of primary and secondary granules, biochemical and light and EM study, 577

H

Hamster, adrenal gland, carbohydrates of medullary cells, cytochemical light and EM study, 463
Helix, ribosomal, *Entamoeba invadens*, induction by inhibitors of protein synthesis, biochemical and light and EM study, 529
—, ribosomal, *Entamoeba invadens*, structure and function of, autoradiographic and biochemical study, 540
Heme and hemoglobin synthesis, murine erythroid cells, effect of erythropoietin, biochemical and cytological study, 298
Hemoglobin and heme synthesis, murine erythroid cells, effect of erythropoietin, biochemical and cytological study, 298
Histochemistry, artifacts in lead nitrate determination of adenylate cyclase, biochemical and EM study, 39
Hormone, growth, ox pituitary, effect of pronase on release, immunological and EM study, 223
Human, melanocytes, cytoplasmic filaments in melanin pigmentation, effect of cytochalasin B and vincristine, light and EM study, 481
5-Hydroxytryptamine transport and storage, thrombin-treated platelets, biochemical and EM study, 359

I

Immunoglobulins, concanavalin A receptors, and θ antigen, mouse lymphocyte surface, immunofluorescence and EM study, 123
Inhibitors, cycloheximide, puromycin, actinomycin D, emetine, and metranidazole, induction of ribosomal helices, *Entamoeba invadens*, biochemical and light and EM study, 529
Insect *Oncopeltus fasciatus*, intersegmental boundary, anatomy of compartment border, light and EM study, 373
—, silkmoth *Hyalophora cecropia*, organogenesis, formation of temporary flagellar structures, EM study, 489
Intestine, rat, absorption of decanoic and octanoic acids, biochemical and autoradiographic EM study, 383
Invasion, intercellular, rabbit peritoneal neutrophil granulocytes, role of contact inhibition of locomotion, microcinematographic and light and EM study, 439

J

Junctions, gap and septate, intersegmental boundary, *Oncopeltus*, light and EM study, 373

K

Keratinization, mammalian epidermis, permeability barrier, tracer and freeze-fracture EM study, 180
Kidney, rat, substructure of glomerular slit diaphragm, freeze-fracture EM study, 233

L

Lead nitrate determination of adenylate cyclase, artifacts in method, biochemical and histochemical EM study, 39
Lectins, wheatgerm, soybean, and waxbean, induction of cell-to-cell binding, biochemical and cytological study, 247
Leukocytes, polymorphonuclear, guinea pig, protein and glycoprotein of primary and secondary granules, biochemical and light and EM study, 577
Liposome-encapsulated chelating agents, cellular penetration and mechanism of metal removal, mouse liver, EM study, 112
Liver, mouse, liposomes containing chelating agents, cellular penetration and mechanism of metal removal, EM study, 112
—, rat, mitochondria, anionic sites on membrane surfaces, use of polycationic ferritin, biochemical and cytochemical EM study, 615
Locomotion, contact inhibition of, intercellular invasion, rabbit peritoneal neutrophil granulocytes, microcinematographic and light and EM study, 439
— and ruffling membrane activity, chick embryo fibroblasts, role of mucopolysaccharide synthesis, biochemical and phase-contrast microscope study, 286
Lymphocyte surface, mouse, concanavalin A receptors, immunoglobulins, and θ antigen, immunofluorescence and EM study, 123

Lysis, immune, flagellate protozoa, isolation of intracellular symbiotes, characterization of DNA, biochemical and light and EM study, 309

M

Magnesium and calcium, subcellular distribution in guinea pig exocrine pancreas, biochemical and EM study, 88
Melanocytes, human, cytoplasmic filaments in melanin pigmentation, effect of cytochalasin B and vincristine, light and EM study, 481
Membrane, microsomes, human diploid fibroblasts, direct association of messenger RNA, biochemical study, 513
—, organization of neural contacts in outer plexiform layer, monkey and rabbit retina, freeze-fracture EM study, 192
—, outer, yeast mitochondria, attachment of cytoplasmic ribosomes to, biochemical and EM study, 1
— protein synthesis, rabbit reticulocytes, bochemical study, 51
—, ruffling activity, and locomotion, chick embryo fibroblasts, role of mucopolysaccharide synthesis, biochemical and phase contrast microscopic study, 286
— surface, chick embryo muscle, acetylcholine receptor turnover, biochemical study, 335
— surface, rat liver mitochondria, anionic sites, use of polycationic ferritin, biochemical and cytochemical EM study, 615
Metal removal, liposome-encapsulated chelating agents, mouse liver, EM study, 112
Microfilaments, *Nitella*, association with chloroplasts, actin at ectoplasm-endoplasm interface, Nomarski and EM study, 29
Microperoxisomes, pigment epithelial cells, pigmented and albino rodent retina, cytochemical EM study, 324
Microscopy, electron, methods for freeze-fracturing of nerve tissue cultures and cell monolayers, 15
—, phase-contrast and light, hydrostatic pressure chamber, strain-free optical glass windows, 587
Microsomes, human diploid fibroblasts, direct association of messenger RNA with membranes of, biochemical study, 513
Microtubules, chick brain, localization of high molecular weight proteins, biochemical and EM study, 237
—, *Chlamydomonas reinhardtii* basal bodies, formation from probasal bodies, isolation and partial characterization, biochemical and EM study, 65
—, spindle, annelid oocyte, pressure-induced depolymerization, changes in birefringence and length, light microscope study, 603
— with 12, 13, and 15 protofilaments, staining with tannic acid, EM study, 227
Mitochondria, rat liver, anionic sites on membrane surfaces, use of polycationic ferritin, biochemical and cytochemical EM study, 615
—, ribosomes, blood and culture form *Trypanosoma brucei*, biochemical study, 103
—, yeast, attachment of cytoplasmic ribosomes to outer membrane, biochemical and EM study, 1
Monkey *Macaca mulatta* and *M. arctoides*, retina, intramembrane organization of neural contacts in outer plexiform layer, freeze-fracture EM study, 192
Monolayers, cell, methods for freeze-fracturing, EM study, 15
Motility and sliding, filaments of Triton-extracted mammalian sperm, effect of adenosine triphosphate, light and EM study, 147
Mouse, liver, liposomes containing chelating agents, cellular penetration and mechanism of metal removal, EM study, 112
—, lymphocyte surface, concanavalin A receptors, immunoglobulins and θ antigen, immunofluorescence and EM study, 123
—, skin, permeability barrier in epidermis, tracer and freeze-fracture EM study, 180
—, stomach, isolation of gastric parietal cells, biochemical and light and EM study, 428
—, testis, structure and transcription in spermatid genome, autoradiographic light and EM study, 258
Mucopolysaccharide synthesis, role in ruffling membrane activity and cell locomotion, chick embryo fibroblasts, biochemical and phase-contrast microscope study, 286
Myosin, tropo-, antibody localization in nonmuscle cells, biochemical and immunofluorescence study, 549

N

Necklace, nucleolar, chick embryo fibroblasts, effect of adenosine analogues, light microscope study, 418
—, nucleolar, chick embryo fibroblasts, formation by dichlororibobenzimidazole and other adenosine monologues, biochemical study, 398
Neurons, outer plexiform layer, monkey and rabbit retina, intramembrane organization of specialized contacts, freeze-fracture EM study, 192
Newt *Triturus alpestris*, oocytes, effects of actinomycin D on association of ribosomal RNA to deoxyribonucleoprotein, biochemical and autoradiographic light and EM study, 163
Nuclear envelope, *Amoeba proteus*, phospholipid synthesis and behavior during cell cycle, autoradiographic and biochemical and cytological study, 631
Nucleolus, chick embryo fibroblasts, necklace formation by dichlororibobenzimidazole and other adenosine monologues, biochemical study, 398
—, chick embryo fibroblasts, necklace formation, effect of adenosine analogues, light microscope study, 418

O

Oocytes, annelid, pressure-induced depolymerization of spindle microtubules, changes in birefringence and length, light microscope study, 603
—, *Triturus*, effects of actinomycin D on association of ribosomal RNA to deoxyribonucleoprotein, biochemical and autoradiographic light and EM study, 163

Organelle translocation, computer analysis, primary neuronal cultures and continuous cell lines, Nomarski and EM study, 562
Organogenesis, insect, formation of temporary flagellar structures, EM study, 489
Ox, pituitary gland, effect of pronase on growth hormone release, immunological and EM study, 223

P

Pancreas, guinea pig, subcellular distribution of calcium and magnesium in acinar cells, biochemical and EM study, 88
Permeability barrier, mammalian epidermis, tracer and freeze-fracture EM study, 180
Peroxisomes, micro-, pigment epithelial cells, pigmented and albino rodent retina, cytochemical EM study, 324
Phospholipid synthesis and behavior during cell cycle, *Amoeba proteus*, nuclear envelope, autoradiographic and biochemical and cytological study, 631
Pigment epithelial cells, pigmented and albino rodent retina, presence of microperoxisomes, cytochemical EM study, 324
Pigmentation, human melanocytes, role of cytoplasmic filaments, effect of cytochalasin B and vincristine, light and EM study, 481
Pituitary gland, ox, effect of pronase on growth hormone release, immunological and EM study, 223
Platelets, thrombin-treated, transport and storage of serotonin, biochemical and EM study, 359
Plexiform layer, outer, monkey and rabbit retina, intramembrane organization of neural contacts, freeze-fracture EM study, 192
Pressure chamber, hydrostatic, strain-free optical glass windows, phase-contrast and light microscopy, 587
— depolymerization, spindle microtubules, annelid oocytes, changes in birefringence and length, light microscope study 603
Procollagen location, chick corneal and tendon fibroblasts, use of ferritin-conjugated antibodies, immunocytochemical EM study, 75
Pronase, effect on growth hormone release, ox pituitary, immunological and EM study, 223
Protein, deoxyribonucleo-, association with ribosomal RNA, effects of actinomycin D, *Triturus* oocytes, biochemical and autoradiographic light and EM study, 163
— and glycoprotein, primary and secondary granules of guinea pig polymorphonuclear leukocytes, biochemical and light and EM study, 577
— synthesis inhibitors, induction of ribosomal helices, *Entamoeba invadens*, biochemical and light and EM study, 529
Proteins, high molecular weight, localization in chick brain microtubules, biochemical and EM study, 237
—, plasma membrane, synthesis by rabbit reticulocytes, biochemical study, 51
Protofilaments, 12, 13, and 15, tannic acid-stained microtubules, EM study, 227
Protozoa *Blastocrithidia culicis* and *Crithidia oncopelti*, DNA of intracellular symbiotes isolated by immune lysis, biochemical and light and EM study, 309
Protozoan *Amoeba proteus*, nuclear envelope, phospholipid synthesis and behavior during cell cycle, autoradiographic and biochemical and cytological study, 631
— *Entamoeba invadens*, ribosomes, inhibitor-induced helices, biochemical and light and EM study, 529
— *Entamoeba invadens*, structure and function of polysomal and helical ribosomes, autoradiographic and biochemical study, 540
— *Tetrahymena pyriformis*, patterns of basal body addition in ciliary rows, EM study, 503
— *Trypanosoma brucei*, blood and culture forms, mitochondrial and cytoplasmic ribosomes, biochemical study, 103

R

Rabbit, blood, transport and storage of serotonin by thrombin-treated platelets, biochemical and EM study, 359
—, peritoneal neutrophil granulocytes, intercellular invasion, role of contact inhibition of locomotion, time-lapse microcinematographic and light and EM study, 439
—, reticulocytes, synthesis of membrane proteins, biochemical study, 51
—, retina, intramembrane organization of neural contacts in outer plexiform layer, freeze-fracture EM study, 192
Radioactive label, [^{14}C]EDTA, liposome-encapsulated chelating agents, cellular penetration and mechanism of metal removal, mouse liver, EM study, 112
— label, [^{14}C]glycine, [^{59}Fe]ferrous citrate, and [^{3}H]-leucine, effect of erythropoietin on heme and hemoglobin synthesis, murine erythroid cells, biochemical and cytological study, 298
— label, [^{14}C]leucine and [^{3}H]uridine, nucleolar necklaces, chick embryo fibroblasts, formation by dichlororibobenzimidazole and other adenosine monologues, biochemical study, 398
— label, [^{14}C]- or [^{3}H]adenine and [^{14}C or ^{3}H]uridine, direct association of messenger RNA with microsomal membranes, human diploid fibroblasts, biochemical study, 513
— label, [^{45}Ca]calcium, subcellular distribution of calcium and magnesium in guinea pig exocrine pancreas, biochemical and EM study, 88
— label, [^{3}H]adenosine, [^{3}H]cytidine, [^{3}H]guanosine, and [^{3}H]uridine, effects of actinomycin D on association of ribosomal RNA with deoxyribonucleoprotein, *Triturus* oocytes, biochemical and autoradiographic light and EM study, 163
— label, [^{3}H]arginine and [^{3}H]uridine, structure and transcription, mouse spermatid, autoradiographic light and EM study, 258
— label, [^{3}H]cAMP, [^{32}P]AMP-PNP, [^{32}P]ATP, and [^{32}P]P, artifacts in lead nitrate determination of

adenylate cyclase, biochemical and histochemical EM study, 39
Radioactive label, [^{3}H]choline and [^{3}H]amino acids, phospholipid synthesis and behavior during cell cycle, *Amoeba proteus* nuclear envelope, autoradiographic and biochemical and cytological study, 631
— label, [^{3}H]decanoic and [^{3}H]octanoic acids, intestinal absorption of unesterified fatty acids, biochemical and autoradiographic EM study, 383
— label, [^{3}H]leucine, mammalian cell line resistant to chloramphenicol analog, biochemical and cytological study, 492
— label, [^{3}H]leucine, mitochondrial and cytoplasmic ribosomes, blood and culture form *Trypanosoma brucei*, biochemical study, 103
— label, [^{3}H]leucine and [^{32}P]phosphate, inhibitor-induced ribosome helices, *Entamoeba invadens*, biochemical and light and EM study, 529
— label, [^{3}H]phenylalanine, [^{3}H]uridine, and [^{32}P]-phosphate, structure and function of polysomal and helical ribosomes, *Entamoeba invadens*, autoradiographic and biochemical study, 540
— label, [^{3}H]serotonin, [^{14}C]serotonin, and [5-^{14}C]-hydroxyindoleacetic acid, transport and storage of serotonin, thrombin-treated platelets, biochemical and EM study, 359
— label, [^{125}I]bungarotoxin, acetylcholine receptor turnover, surface membrane, chick embryo muscle, biochemical study, 335
— label, [^{125}I]iodine, procollagen location in chick corneal and tendon fibroblasts, use of ferritin-conjugated antibodies, immunocytochemical EM study, 75
— label, [^{125}I]sodium iodide and [^{35}S]methionine, synthesis of membrane proteins, rabbit reticulocytes, biochemical study, 51
— label, [^{35}S]sulfate, role of mucopolysaccharide synthesis in ruffling membrane activity and cell locomotion, chick embryo fibroblasts, biochemical and phase contrast-microscope study, 286
Rat, adrenal gland, carbohydrates of medullary cells, cytochemical light and EM study, 463
—, intestine, absorption of decanoic and octanoic acids, biochemical and autoradiographic EM study, 383
—, kidney, substructure of glomerular slit diaphragm, freeze-fracture EM study, 233
—, liver, mitochondria, anionic sites on membrane surfaces, use of polycationic ferritin, biochemical and cytochemical EM study, 615
Receptor, acetylcholine, surface membrane, chick embryo muscle, biochemical study, 335
Reticulocytes, rabbit, synthesis of membrane proteins, biochemical study, 51
Retina, pigmented and albino rodent, microperoxisomes in pigment epithelial cells, cytochemical EM study, 324
Ribonucleic acid, messenger, direct association with microsomal membranes, human diploid fibroblasts, biochemical study, 513
— acid, ribosomal, association with deoxyribonucleoprotein, effects of actinomycin D, *Triturus* oocytes, biochemical and autoradiographic light and EM study, 163
Ribosomes, cytoplasmic and mitochondrial, blood and culture form *Trypanosoma brucei*, biochemical study, 103
—, cytoplasmic, yeast mitochondria, attachment to outer membrane, biochemical and EM study, 1
—, *Entamoeba invadens*, inhibitor-induced helices, biochemical and light and EM study, 529
—, polysomal and helical, structure and function of, *Entamoeba invadens*, autoradiographic and biochemical study, 540
Rodent, pigmented and albino, retina, microperoxisomes in pigment epithelial cells, cytochemical EM study, 324

S

Segmental boundary, *Oncopeltus*, anatomy of compartment border, light and EM study, 373
Serotonin transport and storage, thrombin-treated platelets, biochemical and EM study, 359
Skin, mouse, permeability barrier in epidermis, tracer and freeze-fracture EM study, 180
Slit diaphragm, rat kidney glomerulus, freeze-fracture EM study, 233
Sperm, bull and human, Triton-extracted, effect of adenosine triphosphate on sliding and motility of filaments, light and EM study, 147
Spermatid, mouse testis, structure and transcription, autoradiographic light and EM study, 258
Spindle microtubules, annelid oocyte, pressure-induced depolymerization, changes in birefringence and length, light microscope study, 603
Stomach, mouse, isolation of gastric parietal cells, biochemical and light and EM study, 428
Symbiotes, intracellular, isolated by immune lysis of flagellate protozoa, characterization of DNA, biochemical and light and EM study, 309

T

Tannic acid, staining of microtubules with 12, 13, and 15 protofilaments, EM study, 227
Temperature control, hydrostatic pressure chamber for phase-contrast and light microscopy, 587
Testis, mouse, structure and transcription in spermatid genome, autoradiographic light and EM study, 258
Tevenel, chloramphenicol analogue, mammalian cell line resistant to, biochemical and cytological study, 492
Thrombin treatment of platelets, transport and storage of serotonin, biochemical and EM study, 359
Tissue culture, chick embryo spinal cord and dorsal root ganglion, rat brain, neuroblastoma L cells, HeLa and mouse fibroblasts, computer analysis of organelle translocation, Nomarski and EM study, 562
— culture monolayers, methods for freeze-fracturing, EM study, 15
Transcription and structure, mouse spermatid, autoradiographic light and EM study, 258
Tropomyosin, antibody localization in nonmuscle cells, biochemical and immunofluorescence study, 549

V

Vincristine, effect on cytoplasmic filaments during pigmentation, human melanocytes, light and EM study, 481

W

Water loss, permeability barrier, mammalian epidermis, tracer and freeze-fracture EM study, 180

Y

Yeast *Saccharomyces cerevisiae*, mitochondria, attachment of cytoplasmic ribosomes to outer membrane, biochemical and EM study, 1